

Blake Dawson



AUSTRALIAN CONSTRUCTORS ASSOCIATION

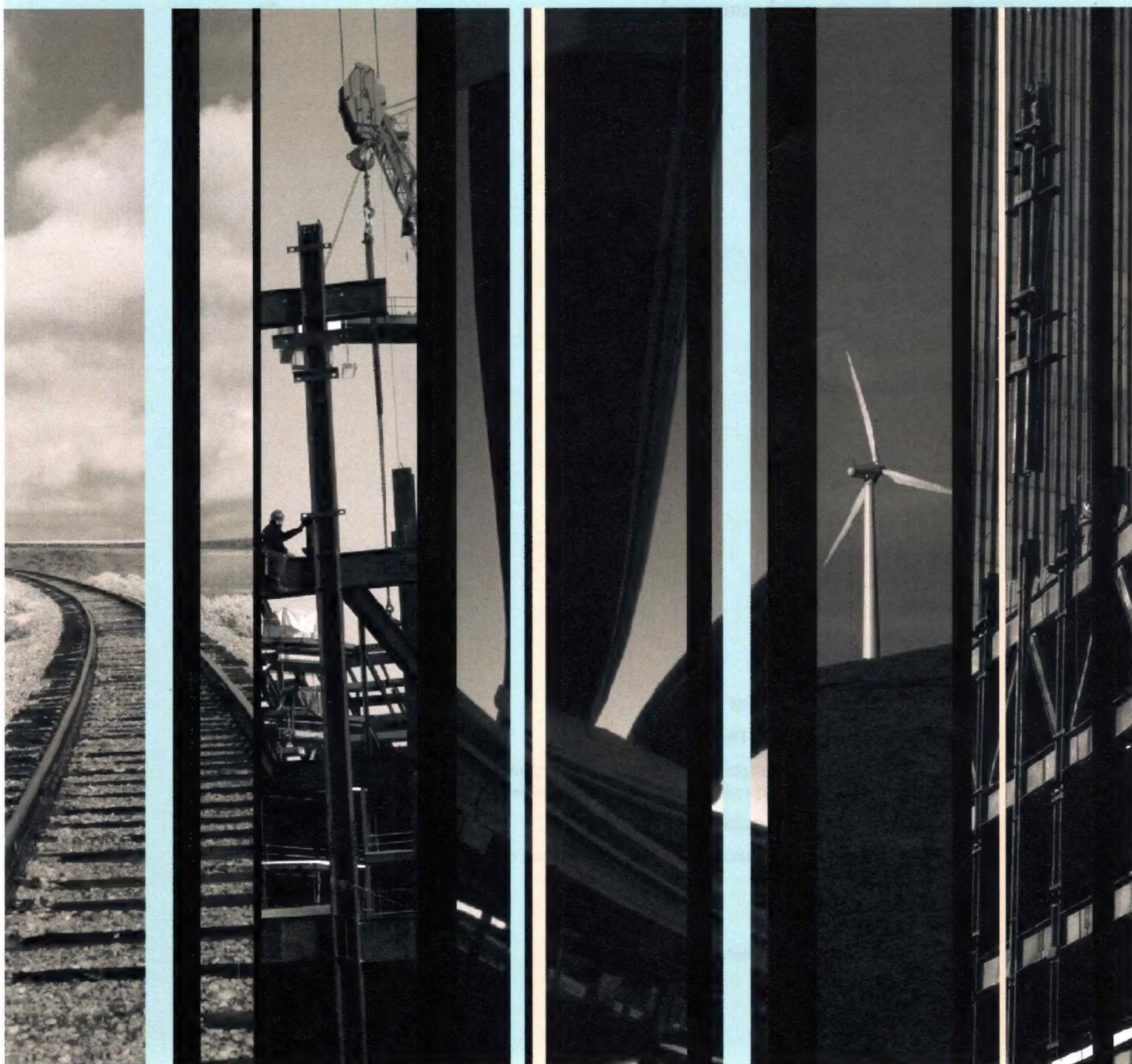


INFRASTRUCTURE
PARTNERSHIPS
AUSTRALIA

BUILDING AUSTRALIA TOGETHER

Scope for Improvement 2008

*A report on scoping practices in Australian
construction and infrastructure projects*



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Foreword

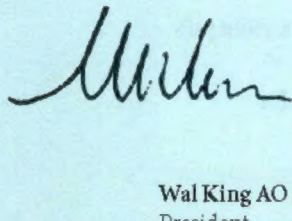
Participants in the Australian construction and infrastructure industry share an interest in delivering exceptional outcomes for the projects in which they are involved.

To achieve collective project and individual success, both public and private sector organisations face significant challenges. The prevailing economic conditions and limited resources require them to perform efficiently and effectively.

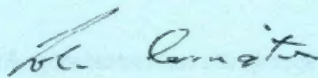
It is time to pause and look at what the industry is doing and what it can do better. This Report, the second in the *Scope for Improvement* series, investigates project scoping, the critically important phase at the outset of a project which is fundamental to a project's success. Scoping is a significant issue and the results of the 2008 research cannot be ignored.

Much like *Scope for Improvement 2006*, the findings in this Report may come as no surprise to those involved in the delivery of projects as it confirms what many have thought. As in 2006, the 2008 Report is based on a survey of a wide range of project stakeholders (both public and private) in the industry and provides an opportunity to look into, and work together to improve, scoping practices.

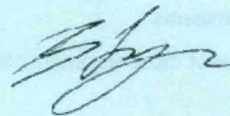
The Australian Constructors Association, Blake Dawson and Infrastructure Partnerships Australia believe that *Scope for Improvement 2008* will promote debate, challenge current practices and lead to greater awareness of approaches which will facilitate successful scoping and deliver better outcomes to all stakeholders.



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Background

2006 REPORT INTO PROJECT PRESSURE POINTS

In April 2006, the Australian Constructors Association and Blake Dawson published the findings of a study into Australian construction and infrastructure projects. The Report, titled *Scope for Improvement*, focused on project pressure points which arise during a project – pressure points being obstacles standing in the way of the delivery of a project and incidents creating stress to the project or its participants.

One of the key findings of the 2006 Report was that industry practice in relation to the scoping of projects was often seriously inadequate.

SCOPING

The scope of a project is the contractual expression of a principal's requirements. The research undertaken for this Report focuses on the process of preparing and developing the scope once the need or opportunity for a project has been identified.

Scoping a project is a critical task requiring experience, discipline and clarity of purpose. While the scoping process will vary for each individual project, at its core, project scoping involves:

- the identification of the fundamental objectives of the project
- the development of the principal's project requirements (such as the desired functional and performance outcomes and/or specific technical requirements) to achieve those objectives, with due regard to stakeholder and end user requirements, any project interface requirements and any other specific project risks and circumstances
- the selection of the most appropriate contractual model and risk profile to deliver the principal's project requirements
- the translation of those requirements into appropriate contractual scope documents for the project.

The 2006 Report highlighted that poor scoping at the outset of a project almost inevitably led to major pressure points occurring throughout the entire project cycle, resulting in cost overruns, delayed completion and disputes.

2008 REPORT INTO PROJECT SCOPING

Building on the 2006 key findings, Blake Dawson, supported by the Australian Constructors Association and Infrastructure Partnerships Australia, has undertaken further research in 2008 to delve into the specific issue of inadequate scoping in Australian construction and infrastructure projects.

The 2008 research examined current problems with scoping in Australian construction and infrastructure projects, to determine why such problems continue to occur and to address the challenge of how to implement changes to improve industry scoping practices.

The research for this Report has been sourced from survey responses provided by industry participants, as well as interviews with leading industry figures from both the public and private sectors. The projects on which survey responses are based were undertaken in the three years before the survey was conducted; they had an average project value of approximately \$360 million and a total value of approximately \$60 billion.

WHY WAS THIS FURTHER RESEARCH NECESSARY?

Construction and infrastructure projects around the country are a vital component of Australia's productive capacity and efficiency. These projects are becoming larger, both in size and in capital cost, and are increasing in complexity. Importantly, there is an unprecedented level of proposed development. Whether or not all of these projects eventuate will depend upon a range of issues, including recent global economic events.

To deliver these projects with positive outcomes for all stakeholders, the Australian construction and infrastructure industry must be operating at its peak. It must avoid inefficiency caused by scoping problems, particularly when there are already limited resources and where the adverse impact of inadequate scoping is significant.

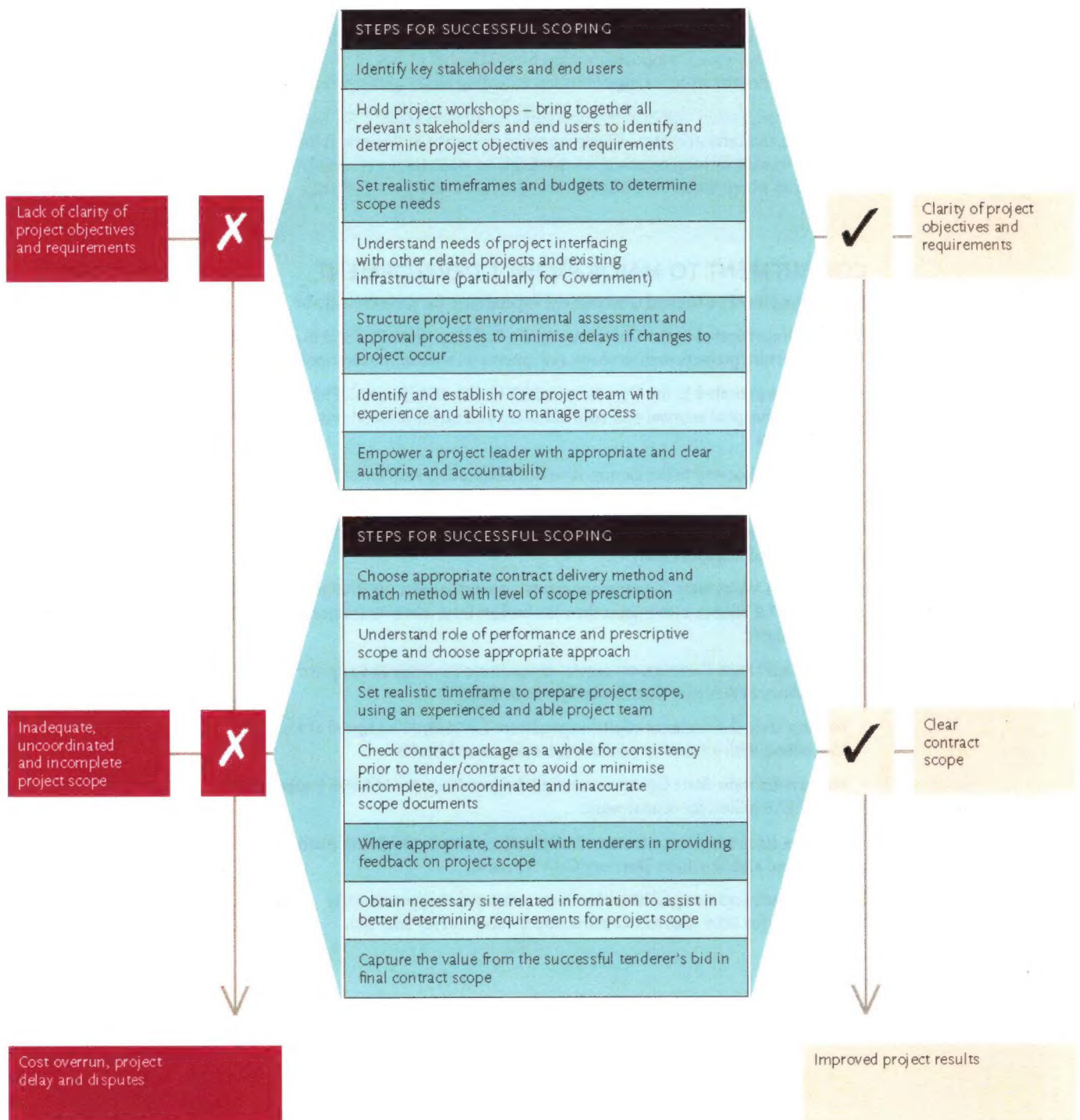
COMMITMENT TO MAJOR PROJECT DEVELOPMENT

Some examples of publicised Government expenditure for projects include:

- \$20 billion allocated to the Commonwealth's Building Australia Fund to spend on infrastructure projects such as roads, rail, ports and telecommunications
- \$10 billion allocated to the Commonwealth's Health and Hospitals Fund to fund long term hospital renewal and refurbishment and major medical research facilities and projects
- \$11 billion allocated to the Commonwealth's Education and Investment Fund for capital and higher educational and training facilities
- over \$22 billion in land and transport infrastructure under a second AusLink national land transport plan
- New South Wales State Government capital expenditure for 2008/09 budgeted at a record \$13.9 billion; 11% higher than the budget from 2007/08 (subject to the 2008 Mini Budget).
- Queensland State Government capital expenditure for 2008/09 budgeted at over \$17 billion; 21% higher than the budget from 2007/08
- Victoria State Government capital expenditure for 2008/09 budgeted at a record \$3.2 billion with a focus on education, transport and health
- Western Australia State Government capital expenditure for 2008/09 budgeted at a record \$7.6 billion for capital works
- there are also record infrastructure budget allocations by the South Australian, Tasmanian and Northern Territory Governments.

Private infrastructure expenditure has been estimated at approximately \$92.3 billion for 2009 (Source: *Construction Outlook Survey May 08*).

Scope for improvement



Key findings

THE PRESENT SITUATION

There is a high prevalence of deficient scoping in Australian construction and infrastructure projects

52% of respondents felt that their project was not sufficiently and accurately scoped prior to going to market. In 2006, 42% of respondents felt the same.

Scoping problems existed to almost the same degree in all projects, industry-wide, whatever their value; and most respondents thought the situation was getting worse.

Scoping inadequacies are being discovered far too late

Not only does industry appear to be getting scoping wrong more often, inadequacies in scope documents are most commonly picked up only when they become a problem during project execution (64% of respondents), rather than at an earlier more manageable phase of the project before contracts are signed.

The consequences of poor scoping are significant

The consequences from scoping inadequacies are substantial, with respondents reporting cost overruns (61%), delayed completion (58%) and disputes (30%).

Scoping inadequacies resulted in 26% of the \$1 billion+ projects surveyed being more than \$200 million over budget.

MAIN FACTORS LEADING TO POOR SCOPING IN AUSTRALIAN CONSTRUCTION AND INFRASTRUCTURE PROJECTS

Lack of experienced and sufficiently competent personnel

The inexperience and insufficient level of competence of those preparing scope documents are clearly identified by respondents as the most significant contributors to inadequate scoping. 83% of respondents felt the skills shortage in Australia had an adverse impact on their ability to find skilled resources and expertise to develop scope documents properly.

Insufficient time to prepare the scope documents

Second only to the problem of lack of skilled personnel, was allowing insufficient time to prepare the scope documents before going to market. 37% of respondents highlighted this as a key contributor to inadequate scoping.

Inadequate definition of project objectives by the principal resulting in subsequent changes to the scope

32% of respondents thought inadequate definition of the principal's required outcomes was a key contributor to inadequate scoping. A recurrent theme is just how essential it is for principals to correctly identify and express their project objectives at the outset, as it is impossible to get the scope correct unless these fundamental objectives have been determined.

Corrections to scope documents

42% of respondents identified incompleteness of the scope information as the reason why alterations had to be made to scope documents; 30% identified lack of coordination; and 21% identified errors in scope documents.

Lack of consultation with end users

The importance of involving end users at the outset in the development of scope documents is widely recognised in the survey responses. 87% of respondents said there would be an adverse impact on a project if end users were not appropriately consulted when preparing the scope documents.

Where end users were not engaged in the project prior to going to market, the respondents considered their project was sufficiently scoped only 20% of the time. In projects where end users were consulted, principals were more than twice as likely to have released a sufficiently complete scope document to market.

Insufficient site information

28% of respondents reported that insufficient information about the project site was provided in the scope documents. This was an issue identified more by contractors than by principals.

PRACTICAL STEPS FOR SUCCESSFUL SCOPING

Industry needs to think and act differently

There needs to be a much greater focus placed on getting the scope right from the start of each project.

In particular, scope documents which form part of construction and infrastructure contracts should be given equally prominent time and attention during the contract development and negotiation processes as the commercial terms and conditions.

Clearly identify project objectives

Industry participants must invest focused and realistic time, with proper effort and resources, at the start of projects to determine clearly what the principal, stakeholders and end users want to achieve from the project.

Bring together all relevant stakeholders and end users for the project

All relevant stakeholders and end users for the project should be brought together to identify key scoping objectives and requirements that need to be addressed. The preferred approach is to conduct upfront project workshops as a core component of project scoping.

Set realistic timeframes and budgets

For determining and describing the project scope, set realistic timeframes and budgets based predominantly on the project demands and requirements and not influenced unnecessarily by external commercial or political factors.

Interface the proposed project with related projects and existing infrastructure

Where appropriate, consider the delivery of the project in context with other related and upcoming projects (as well as existing infrastructure) and then coordinate and interface accordingly. This is particularly relevant when dealing with major Government infrastructure projects.

Interplay between project scoping and the statutory environmental and planning approval process

Ensure the linkages are coordinated between the scope of the project, the timing of the contract documentation preparation and the timing of the environmental assessment. Manage this process early to minimise the need to modify the project approval for design changes which do not significantly change the environmental impact of the project.

Identify and establish a core project team

Utilise skilled industry personnel in the development of the scope documents and call on end users for input into the preparation of scope documents. This core team is critical for the success of a project.

Empower a project leader with appropriate and clear authority and accountability

It is critical that the principal empowers a single person with the appropriate authority and responsibility to drive the scoping process, make decisions and be accountable.

Clearly describe the project objective and requirements once identified

Once the objectives and overall requirements for a project are identified, those objectives and requirements should be described accurately with particular regard to the project and the contract delivery method chosen for that project. This should be done without duplication of, or any overlap or inconsistency with, the commercial terms of the contract.

Choose the right approach for scope description

There are different approaches to describing project scope and this choice is critical to success. Project participants must better understand their options so that the appropriate choices are made. Industry training programs in this area would be a positive initiative.

Choose the right contract delivery model

Aligning the contract delivery method with the scoping of the project is a key ingredient. The method chosen has to be in the best interests of the project and suit the intended role of the contractor.

The choice of contract delivery model itself is not a solution to overcoming or reducing scoping problems. There is, however, a high level of perception from industry participants (78%) that some forms of contract delivery are more capable of overcoming issues that arise from inadequate scoping.

Include site related information

Preparation in bringing together relevant information on site conditions (such as underground services and geotechnical data) assists in the development of scope documents. Accordingly, during the planning phase of the project it is important that appropriate investigations into site conditions are undertaken and the results shared, to reduce the risk that changes to project scoping may be required due to unforeseen circumstances.

Check the contract package for consistency

The intended overall contract package should be checked for consistency, particularly where that package is prepared by a multi disciplinary team. The number of different people involved in creating documents to form the contract package leads to the potential for ambiguities in, and discrepancies between, scope and other contract documents.

Involve tenderers in getting the scope documents right

Early contractor involvement in developing the scope documents to form part of the contract package can assist in identifying scoping issues. A rigid competitive tender process will often stifle the ability for dialogue between principals and tenderers to flesh out scoping issues early on in the process. In appropriate instances, consideration should be given to holding separate interactive workshops with each of the tenderers bidding for projects to tease out scope issues prior to contract signing.

Capture the value from a successful bid in the final contract

The way in which a construction and infrastructure project is described contractually should not just take into consideration the documents produced by or on behalf of the principal. Particularly where a contractor has been selected during a competitive tender process, consideration should be taken of what the successful tenderer has promised in its bid so the value is appropriately captured in the final contract.

Resolve scoping issues and disputes under a contract

Emphasis should be on preparing a contract that includes effective means for managing and resolving scoping issues and disputes should they arise during the project.

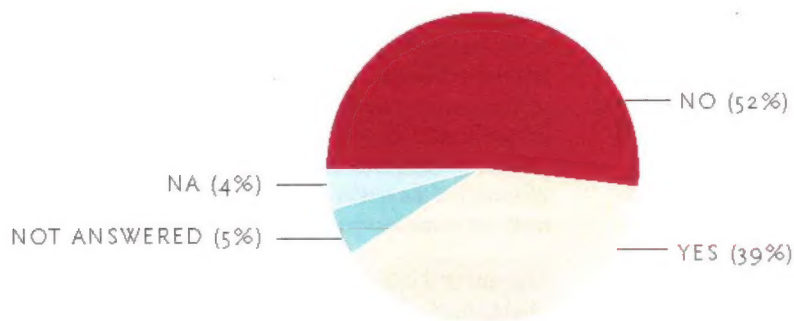
Scoping is still deficient

PROJECT SCOPING IS GETTING WORSE, NOT BETTER

The 2008 research confirms that scoping is getting worse in major Australian construction and infrastructure projects.

In 2008, only 39% of projects surveyed were sufficiently and accurately scoped at this crucial early stage. In contrast, in 2006, 53% of respondents felt that the projects in which they were involved were sufficiently and accurately scoped before going to market.

WAS THE PROJECT SUFFICIENTLY AND ACCURATELY SCOPED PRIOR TO GOING TO MARKET?



The issue of inadequate scoping is not confined to low or moderate value projects, although the problem appears to be most acute at this scale. It is a problem identified right across the spectrum of project value. Of projects with a value over \$1 billion, 43% were reported as being inadequately scoped before going to market.

Has scoping actually deteriorated over time or have industry expectations for scope documents increased? It is apparent from the unprompted, free response section of the survey that most respondents feel industry practice is deteriorating. 59% of respondents reported worsening trends in the preparation of scope documents compared with 35% reporting positive trends.

Industry viewpoint

"The fundamental understanding of what needs to go into a scoping document is not improving."

"Scope documents are getting worse."

"Document skills are declining."

"As a general impression across the board for infrastructure/construction projects undertaken in Australia, the standard of the scope documents is not good enough and, in some instances, is appalling."

SCOPING INADEQUACIES DISCOVERED FAR TOO LATE

As well as the worsening overall trend in scoping, inadequate documentation is identified too late in the life of a project. The survey confirms that inadequacies in scope documents are most commonly identified during project execution rather than before contract signing, when inadequacies can be more manageably addressed.

The survey reveals that inadequacies manifest themselves most often during the project execution phase (64%); rather than in project definition phase (27%); during market request (31%); or during contract negotiation (38%).

AT WHICH PHASE(S) OF THE PROJECT DID THE SCOPING INADEQUACY MANIFEST ITSELF?



“Fixing scoping problems during the project requires a lot of goodwill, as the parties have entered into contracts by that stage. Parties usually tend to fall back on their contracts rather than being flexible in making changes and adjustments. It is costly to make changes and can result in compromises in quality.”

CONSEQUENCES OF POOR SCOPING ARE SIGNIFICANT

Where scoping is poor, the consequences on projects are significant, with respondents reporting cost overruns (61%), delayed completion (58%) and disputes (30%).

EFFECT OF INADEQUATE SCOPE DOCUMENTS ON PROJECTS 2008 v 2006



The 2008 survey revealed that inadequate scoping has severe cost consequences on projects. 61% of respondents said that inadequate scope documents resulted in a cost overrun, with more than half of those overruns costing more than 10% of the value of the project and a third more than 20%.

With the value of construction and infrastructure projects always on the rise, these cost overruns have a substantial impact on the success of a project.

For projects surveyed with a value of over \$1 billion, approximately one quarter experienced a cost overrun of more than 20% of project value (on average, \$200 million+ over budget) because of inadequacies in scope documents.

On smaller scale projects (for example, in the \$20 million to \$50 million range), approximately one in five projects had a cost overrun of more than 20% of project value (on average, \$7 million) because of the inadequacies in scope documents.

58% of respondents said that inadequate scope documents meant a delay to the project, with more than half of those delays lasting four months or more.

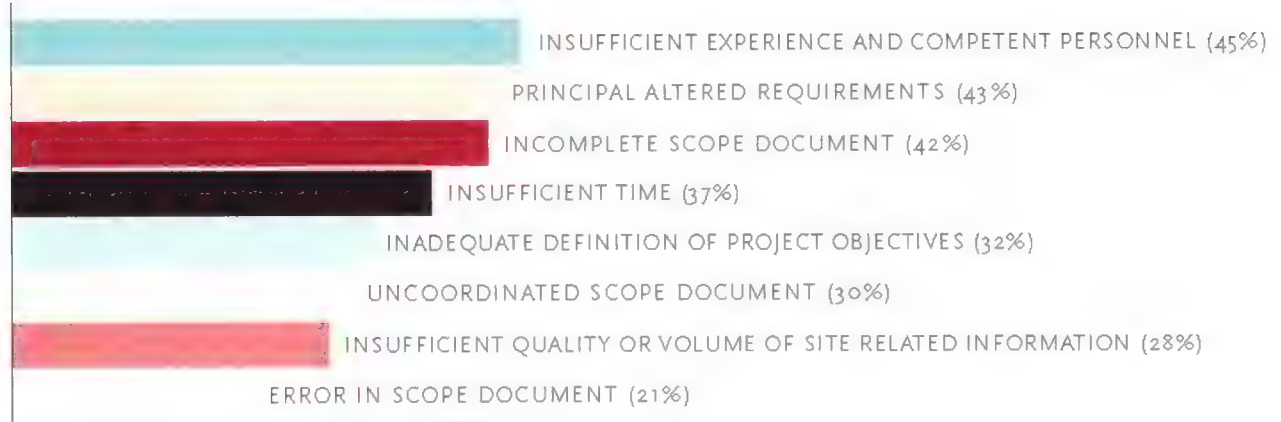
In relation to disputes, 30% of respondents stated that a dispute resulted from the inadequate scoping of their projects, with approximately 55% of those disputes lasting four months or more.

“Inadequate scope is detected once work begins, resulting in a variation to the scope for which the principal has to pay the contractor extra, which means the contract price or budget does not reflect the eventual actual cost, and the work is not completed by the original due date for completion.”

Finding the reasons for inadequate scoping

WHAT LEADS TO POOR SCOPING IN AUSTRALIAN CONSTRUCTION AND INFRASTRUCTURE PROJECTS?

MAIN FACTORS LEADING TO POOR SCOPING



The six key themes that emerge from the main factors which contribute to inadequacies in, and necessitate changes to, scope documents are:

- lack of experienced and sufficiently competent personnel
- insufficient time to prepare the scope document
- inadequate definition by the principal of project objectives
- incomplete, uncoordinated and inaccurate scope document
- failure to properly consult with end users
- insufficient site information.

"Taste plus poor skills is not a good combination."

Industry viewpoint

LACK OF EXPERIENCED AND SUFFICIENTLY COMPETENT PERSONNEL

The inexperience and insufficient level of competence of those preparing the scope documents are clearly identified by respondents (45%) as the most significant contributors to inadequate scoping. Only 14% of respondents identified that there was an insufficient number of personnel involved in the scoping process.

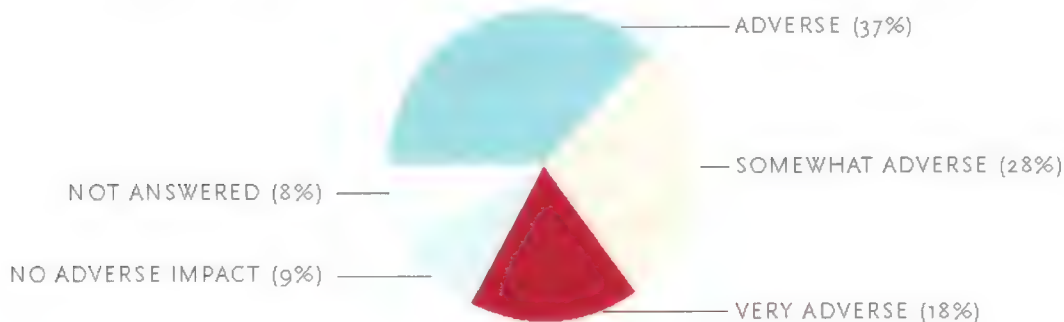
As highlighted in the 2006 Report, again it is the quality of the people in the industry which poses serious challenges to improved scoping. In the two years since the first Report, Governments have implemented policies that have sought to address the issue, including:

- the establishment by the Commonwealth of Skills Australia and the implementation of its Skilling Australia program, which places mining and construction as one of four priority sectors
- the establishment of Construction Skills Queensland
- the expansion of the skilled migrant temporary visa scheme by the Commonwealth.

Despite these recent initiatives there is still more improvement to be made: 83% of respondents said that the present skills shortage in Australia has had an adverse impact upon their ability to find sufficiently skilled resources and expertise to develop adequate scope documents.

Staff retention was also seen as a key challenge for the industry. 80% of respondents identified that staff retention issues had an adverse impact.

EXTENT THAT SKILLS SHORTAGE IN AUSTRALIA HAS HAD AN ADVERSE IMPACT ON THE ABILITY TO FIND SUFFICIENT RESOURCES AND EXPERTISE TO DEVELOP ADEQUATE SCOPE DOCUMENTS



“Appropriate resources at the front end of the project are critical for success. The resources shortage is a big issue for the delivery of a successful project and there are not enough people with the right skill set. This is a serious issue from a Government perspective which can’t compete with private sector remuneration to attract high quality people to take up jobs that are needed.”

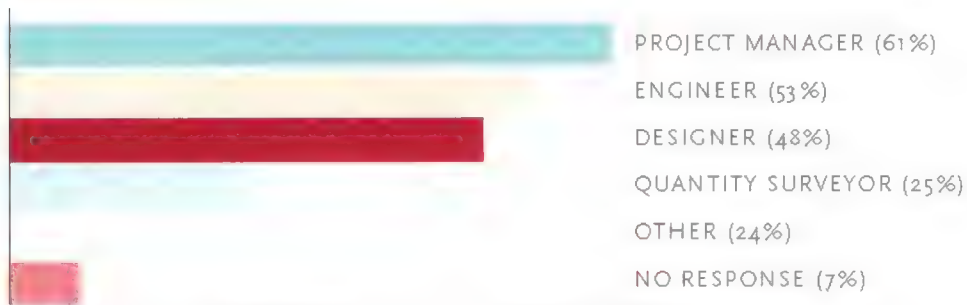
“The most successful projects I have been involved in are where the client’s long term/experienced personnel were responsible for scoping.”

“Putting good scope documents together depends on selecting the right consultants/managers with the relevant experience for the product that the principal wants to be delivered.”

In terms of the right people with appropriate experience and qualifications, the survey respondents identified two disciplines – project directors (43%) and design consultants (45%) – as the key positive contributors to the quality and content of the scope documents.

The survey also asked respondents what resources were difficult to find to assist in developing adequate scope documents. The three most sought after industry professionals were: project managers (61%), engineers (53%) and other designers (48%).

PRIMARY RESOURCES THAT ARE DIFFICULT TO FIND TO ASSIST IN DEVELOPING ADEQUATE SCOPE DOCUMENTS



“The market does seem to be struggling with obtaining resources of sufficient expertise to prepare appropriate scope documents.”

“Less experienced people are being paid to lead scope development. Mistakes are made regularly. Bring back some older hands to peer review.”

INSUFFICIENT TIME TO PREPARE THE SCOPE DOCUMENT

Second to the personnel and skills problems, 37% of respondents highlighted insufficient time as a key contributor to inadequate scoping, a similar result to the 2006 Report.

It does not seem to be a matter of insufficient budget allocated to scope the job properly (only 16% thought that), but rather the physical restraints of unrealistic timeframes.

Respondents mentioned several reasons why insufficient time is allowed for the scope of a project to develop properly:

- in the public sector, political imperatives were often cited as taking precedence over planning, so that their implementation was rushed. Some respondents referred to projects being announced or advertised before they had been scoped

- also reported was a lack of appreciation among some principals of the time which was required to adequately scope a project
- there was a false belief mentioned by some respondents that time saved at the beginning of a project can be maintained until the end of the project.

Respondents consistently identified one of the major tensions in projects: the tension between making a “flying start” – while knowing that there will be scoping issues which have not been resolved at the outset – and taking the time initially to properly develop the scope before going to market.

“Delivery failure is not an option. Timeframes are hopelessly compressed.”

“Everything is done in a rush to meet an unreasonable deadline resulting in mistakes.”

“The timing to get the scope to market – if it is rushed, scope documents will not be as good as if there had been more time.”

“Principals will leave things until the last minute, and this often results in bad scope documents.”

“Projects will save time and cost more in the first 15% of their development time than the last 85% (when it is too late).”

“Industry is increasingly reducing the time between project conception to contract award and therefore decreasing the time allowed to properly define the scope, risk allocation and contractual regime for projects.”

INADEQUATE DEFINITION OF PROJECT OBJECTIVES BY THE PRINCIPAL

43% of respondents identified changes by the principal as the reason for a change to the project scope.

Further, 32% of respondents felt that the principal had not adequately defined what it wanted from the project before proceeding to take the project to the market. The research shows that over one third of principals (38%) believe that their projects are inadequately scoped prior to going to market. In contrast, 65% of contractor respondents thought that projects in which they were involved were inadequately scoped – highlighting a gap in perception.

A recurrent theme is just how essential it is for principals to correctly identify and express their project objectives at the outset. Those interviewed drew a distinction between “objectives” and the “scope” of a project.

As one interviewee put it: “You must be clear what you want and why you want it”, that is, it is not possible to get the scope correct unless the fundamental objectives for the project are determined and understood.

The respondents to the survey also suggested several factors which might be at play here:

- a lack of commitment by the principal to undertake the work which is required to ascertain its needs and define its objectives with the appropriate rigour
- a lack of understanding by the principal of the extent of planning and preparatory work needed to properly ascertain the scope
- a lack of skilled people engaged in scoping who understand the principal’s business
- taking projects to the market before they are truly ready.

“Client must be clear on desired outcomes.”

“Client organisation must agree to spending time internally to work out requirements.”

“Principals should take more care and time to properly develop their needs before going to market with undercooked documentation. There appears to be a lack of understanding about the upfront work that is needed for a major project.”

“Clients commence projects with little, if any, planning and scope development leading to inappropriate budgets, generally due to either resource or time pressures. To assist this deficiency many clients have turned to Alliance or Early Contractor Involvement style contracts whereby they can seemingly develop the scope in parallel with design and construction. This works well when the client still maintains enough resources and control over the process to ensure that the scope developed is aligned with its values. However when it abdicates its control by installing additional parties, does the scope developed really reflect the client’s intent?”

Two further aspects of defining the principal's project objectives were raised often in the survey and interviews:

- the need for a single point of accountability for the scope within the principal's organisation
- the need to consult with stakeholders.

Both of these issues arise where the principal is an organisation which has a number of stakeholders, usually (but not always) in the public sector. One of the respondents noted that in some projects "too many people think they are the owner" of the project. They suggested that what was

required was a single person who was recognised by all stakeholders within the principal's sphere as having absolute authority and to be the interface with the contractor.

Another issue in complex projects with long lead-in periods is when other (often political) circumstances may change over relatively short periods of time, particularly in public sector projects. For example, anticipated population movements or other major infrastructure projects in the vicinity may impact upon, and require change to, the principal's requirements for the project.

"Insufficient clarity of objectives."

"Lack of understanding of why the project is required and what benefits it will produce."

"A key issue is to keep pace with technological and population changes during the planning phase of a project."

INCOMPLETE, UNCOORDINATED AND INACCURATE SCOPE DOCUMENT

In addition to the principal's alteration of its requirements after contract signing, the survey revealed three main reasons which emerged to explain why scope documents were changed. These reasons were that the scope document was:

- incomplete
- uncoordinated
- contained mistakes.

The survey also revealed that many respondents were involved in projects where the scope documents were changed at the request of a tenderer.

ERRORS IN SCOPE

A common reason for needing to change scope documents was that they were incomplete in the first instance. This was raised as an issue by 42% of respondents.

However, problems were not limited simply to incompleteness of the scope information. Significant numbers of respondents also found that the scope documents were uncoordinated (30%) or contained errors (21%).

Incomplete, incorrect and ambiguous scope documents are problematic for those required to deliver a project. These factors may also be

indicators that the principal has not settled on the outcome which it requires from its project.

A contributing factor is the number of people or organisations involved in preparing the scope document. The survey found that very few (6%) of the surveyed projects had only one organisation involved. The clear majority of projects had between two to five organisations involved. Nearly 20% had between six to ten organisations and 6% had more than 10 organisations involved in preparing the scope document.

Some of the contractor respondents felt that these errors were indicative of principals attempting to have some of their investigative or other scoping work undertaken by contractors. As one interviewee remarked: "It is not for the contractor to tell the principal what the scope ought to be!"

Some contractors who responded were advocates for early contractor involvement in projects.

This illustrates that contractors are not always averse to assisting principals in ascertaining and defining the scope of their projects. It sends a clear signal that this is a service which contractors consider valuable to their clients, and for which they expect to be engaged under appropriate contractual arrangements.

TENDERER REQUESTED CHANGES TO SCOPE

In addition to the changes to scope documents which were made by the principal, 25% of respondents indicated that tenderers themselves had called for changes to the scope documents in projects in which they were involved.

There are different reasons why a tenderer may seek changes to a scope which has been released to the market by a principal.

One reason is the presence of errors in the scope document such as those discussed above. However, there are also occasions where the scope is deficient, yet through choice or

ignorance a tenderer remains silent. Where a tenderer is silent through choice, the risk allocation of the contract is likely to be a fundamental consideration for a tenderer as there may be additional money to be made.

Another reason for a tenderer to request a change in scope is where it is able to deliver additional value to the principal if certain aspects of the scope are altered. In a competitive environment, the ability of a tenderer to differentiate its offer may mean the difference between being awarded the project or not.

“Once a bid is accepted and finalised, there is a need to ensure the documents are drafted correctly and consistently reflect what has been agreed to be delivered including, if necessary, amending the actual brief/scope documents to reflect what is actually agreed.”

“The technology of ‘cut and paste’ electronically, means no one is reading and ensuring the document is correct and sound.”

INSUFFICIENT SITE INFORMATION

Site information was an issue highlighted in the 2006 Report, and 28% of respondents in 2008 reported there was insufficient information related to the site provided to them. This represents 45% of the contractors who responded to the survey and 23% of the principals. Similar to the 2006 Report, these figures reflect the disparity in perception between principals and contractors concerning the importance of site information.

“Sufficient site investigation should be undertaken.”

“Undertake adequate technical investigation (eg geotechnical data, survey etc) – no hidden traps.”

CONSULTATION WITH END USERS

The survey also looked at the role of end users in scoping projects. The responses to the survey show that the importance of involving end users upfront in the development of scope documents is widely recognised, but inconsistently applied in practice.

There is a large gap reported between perception and reality when it comes to the importance of end users in the process. The majority (60%) of respondents said that they had consulted with end users of projects when preparing the scope.

However, there is still a significant minority of respondents (25%) who said that end users had not contributed to the scope document for their project. This is reported despite 87% of respondents saying there would be an adverse impact on the project if end users were not appropriately consulted when preparing the scope document.

There is a distinct disparity in the responses from industry. The same respondents, when asked about their specific projects, considered that end users were a key contributor to the quality and content of the scope document in approximately only 12% of cases. Furthermore,

only 39% of respondents said that end users were involved in the preparation of scope documents most or all of the time.

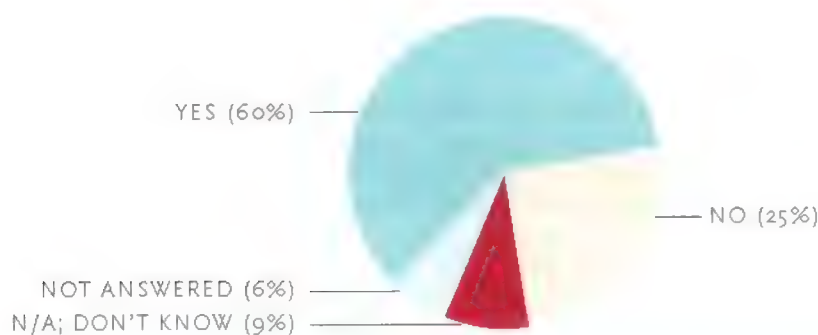
So, while the majority of respondents did consult with end users on the specific projects surveyed, and appeared to understand that consultation with end users was an important exercise to undertake, the actual contribution of end users was only perceived to be of significant value in a small minority (12%) of cases.

This suggests the contribution of end users is not as highly valued as the industry says it is.

Where the end user was engaged in the project prior to going to market, the respondents considered their project was sufficiently scoped 50% of the time. In contrast, when end users were not consulted, the project was sufficiently scoped in only 22% of cases.

An important conclusion to draw is that in projects where end users were consulted, principals were more than twice as likely to have released a sufficiently complete scope document to the market.

DID THE END USERS CONTRIBUTE TO THE SCOPE DOCUMENTS?



"A key to success of the scope document is 'consultation' with the right people. This involves talking to people over a period of time (not just once!) and also ideally showing end users what the finished product will look like by way of a benchmark standard or prototype."

"It is critical that end users of the works are involved upfront in the planning phase."

"Difficulties can arise when user groups won't sign off on scope until they actually see the outcome."

Scoping can be improved

WHAT CAN BE IMPROVED?

The 2008 research reveals two overall deficiencies when it comes to scoping projects:

- lack of clarity of project objectives and requirements
- inadequate, uncoordinated and incomplete project scope.

There are practical steps that can be taken to assist in overcoming these deficiencies.

INDUSTRY NEEDS TO THINK AND ACT DIFFERENTLY

Scope documents are the key for any construction and infrastructure project, describing what will be built. The research confirms that there needs to be a fresh approach in the way projects are managed and a greater focus and effort placed on getting the scope right.

Scope documents which form part of construction and infrastructure contracts should be given equally prominent time and attention during the contract development and negotiation processes as the commercial terms and conditions.

“Hours and hours of negotiation are spent on commercial reviews but not enough time is spent from a technical perspective.”

Industry viewpoint

CLEARLY IDENTIFY PROJECT OBJECTIVES

SCOPE FOR IMPROVEMENT

Invest focused and realistic time, with proper effort and resources at the start of a project to identify the project objectives.

COMMENT

One of the priority issues in getting the scope right is to clearly identify the project objectives. This is achieved by understanding what is important to the principal, key stakeholders and end users and then aligning the contract delivery model to meet the project requirements.

Principals should identify all stakeholders and end users early so that they can be involved in identifying scoping issues and addressing them before going to market.

There is a further need to address and deal with the competing interests of various stakeholders to work out what is best overall for the project. This requires project team leaders with the right skills and ability to cut through and reach outcomes to satisfy all interests.

Another view is that “industry is poor in designing for maintenance”. It is critical that end users of the proposed works are consulted upfront to understand the longer term maintenance and operational issues regarding the proposed infrastructure.

“The key to getting scoping right at the start of a project is having a client who knows what they want in terms of outcome.”

“There is a need to understand what practical function the project seeks to achieve and then to consider the form that should be adopted to resolve the issues.”

“A key factor for positive impact on scoping a document is clarity of purpose. A clear understanding of objectives from the start is very important.”

“In the planning of projects, there is not enough stepping back and thinking about function rather than scope. The emphasis in scope definition should be on the outputs and quality rather than on the inputs or how to meet the requirements.”

“There are a number of projects that start on the back of an envelope e.g. a minister announces that there would be an upgrade to existing infrastructure but with very little substance around what that upgrade will involve.”

“It is important to understand the legitimate stakeholders for a project. Governments tend to identify too many stakeholders. The private sector tends not to identify enough stakeholders.”

BRING TOGETHER ALL RELEVANT STAKEHOLDERS AND END USERS FOR THE PROJECT

SCOPE FOR IMPROVEMENT

All relevant stakeholders and end users for the project should be brought together to identify key scoping objectives and requirements that need to be addressed. The preferred approach from the 2008 interviews with industry leaders is to achieve this by conducting upfront project workshops as a core component of project scoping.

COMMENT

Every construction and infrastructure project has its own particular features and characteristics that need to be taken into account and appropriately managed. Good practice for every project should be to conduct upfront risk management workshops to identify and analyse, in a structured way, the potential risks in delivering the project, and to develop appropriate risk management plans. It is also important that such workshops bring together all relevant stakeholders and end users for the project so that:

- key scoping issues can be addressed
- lessons learnt from similar past projects are understood and taken into account.

Project familiarisation should be a key subject for such workshops, with the aim to identify the various requirements of the project stakeholders and define the objectives, nature and scope of the project.

Getting the right participants to attend such workshops is also critical, as is the attendance of the end user. In a number of Government projects, a shadow operator/maintainer is sometimes consulted so that end user requirements are taken into account and addressed during the preparation and development of scope documents.

Consideration should also be given to holding separate interactive workshops with each of the tenderers bidding for projects to tease out scope issues before contract signing.

For principals involved in the regular delivery of capital works projects, whether in the public or private sectors, it would be useful to conduct a review by the asset owner – approximately three years after works completion – to determine whether or not the project achieved its desired outcomes from an end user perspective.

Reviews will encourage continuous improvement on project outcomes, capturing lessons learnt for future like projects as well as defining clear accountability for the delivery of the project with positive results for the ultimate end users.

The 2008 research clearly reveals that not including end users early on in determining the appropriate scope for a project will have – at least – an adverse impact on the success of the project and, in many instances, a severe adverse impact.

“Better practices on the technical side of things include ‘lessons learnt’ workshops from prior like projects, and also a workshop on the project itself.”

“The industry (in the public sector) is making a significant effort to ensure lessons from previous projects are disseminated and applied.”

“Early contractor involvement is providing better scopes.”

“It is critical that end users of the works are included upfront in the planning phase.”

“Consultation with user groups is a key issue.”

SET REALISTIC TIMEFRAMES AND BUDGETS

SCOPE FOR IMPROVEMENT

Set realistic timeframes and budgets for determining and describing the project scope, based predominantly on the project demands and requirements and not influenced unnecessarily by external commercial or political factors.

COMMENT

Project timetables occasionally are driven or determined in light of political imperatives or commercial factors, which are not necessarily linked or assessed for the overall smooth running of the project. Such factors can arise in either public or private sector projects.

Project delivery timetables should be determined with realistic time periods based predominantly on the project demands and requirements, and not influenced unnecessarily by external factors.

Another common practice with room for improvement is when principals go to market with a tender package at a time when they are still working out their internal requirements for the project.

Starting a tender process for the sake of commencing it is of little benefit to anyone involved in the project. The results from the survey demonstrate that there is a significantly increased prospect of adverse consequences where inadequate scope documents are put to the market.

In this respect nothing has changed since the 2006 Report. In 2006 and again in 2008, several contractor respondents expressed frustration at receiving tender information which they regarded as significantly underprepared.

“There are a number of projects where the political announcement is made too early without the asset owner really knowing at that stage what it actually wants for the project in question.”

“For some projects, politicians can set unrealistic deadlines which can adversely impact on appropriate preparation of scope documents.”

“Unrealistic time pressures also impact on inadequate scope documents, particularly in the Government sector where ministers/advisers do not understand the intellectual effort necessary to define a project properly.”

“Don’t go to market/tender too early.”

“Time and cost pressures will determine how good scope documents are.”

“Basing scope on price can often prevent innovation, or put a limit on the outcome by reducing the quality of tenders that are attracted.”

“There are a number of projects where work may have been scoped and budgeted but little, if any, consideration has been given as to how the project will be funded from an operational perspective once the works have been completed. A number of Government projects now take into account operational costs upfront in deciding whether or not to proceed with a particular project.”

INTERFACE THE PROPOSED PROJECT WITH RELATED PROJECTS AND EXISTING INFRASTRUCTURE

SCOPE FOR IMPROVEMENT

Where appropriate, consider the delivery of the project in context with other related upcoming projects as well as existing infrastructure and then coordinate and interface accordingly.

COMMENT

Particularly for major Government infrastructure projects, the scoping of a particular project by one Government agency may also create the need for other Government agencies to bring forward some of their projects in a tighter timeframe than otherwise planned.

For example, the building of a new railway system may require other infrastructure to support that system, such as the need for new electricity substations. The planning for one particular project may well create timing pressures on other projects. It is, therefore, necessary to take an overall approach to the planning and scoping of all affected projects as well as existing infrastructure.

“Look over your horizons to see what else is there.”

INTERPLAY BETWEEN PROJECT SCOPING AND THE STATUTORY ENVIRONMENTAL AND PLANNING APPROVAL PROCESS

SCOPE FOR IMPROVEMENT

Ensure there is a coordinated linkage between the scope of the project, timing of the contract documentation, scope and presentation of the environmental assessment and timing of the environmental assessment process.

COMMENT

All major projects require various forms of environmental assessment and planning approval from the Government. The requirements for the environmental assessment of a major project are set out in legislation. They usually require:

- an application for approval to construct the project as described in the application
- an environmental assessment document prepared in accordance with terms of reference issued by the Government
- public exhibition of the environmental assessment document
- consideration of the environmental assessment document and the public submissions by the approving authority
- a decision to either refuse or grant the approval subject to conditions. The conditions will often require the project to be undertaken generally in accordance with the description of the project in the environmental assessment document.

It is not uncommon for the construction contract to be entered into following the completion of the environmental assessment and the grant of project approval by the Government subject to conditions.

In many cases, the particular scope of the project may change as a result of more detailed design work undertaken by the contractor as part of the lead up to the contract negotiations, or arising from the implementation of the contract.

The changes may arise from design issues for cost efficiency, engineering or environmental reasons. Some of the changes may have major environmental impacts; others may result in negligible or minor changes to the environmental impact compared to the overall scale of the project.

The principal or contractor in these circumstances may be required to seek a modification to the project approval. An application may need to be made to the Government. An assessment of the environmental impacts of the modification may need to be undertaken with further public exhibition of it required before the modification is approved by the Government. Various contractors and principals have reported that this poses scoping issues.

There are ways in which this scoping risk can be effectively managed by Government, principals and contractors through the approval processes, including:

- **Broad approval:** structure the environmental assessment and approval process to obtain broad approval of a project. This will enable refinements to be undertaken to the design of the project within the envelope of the project approval and without the need for formal modification.
- **Minimising scope change:** reduce the number and scope of changes to the project to further minimise the number and scope of formal modifications to the project approval.
- **Risk allocation:** allocate the cost and time risks of modifications to the project approval to either the principal or the contractor, depending on the reason for the modification being required and who is best placed to manage the process and approval risk.

“Manage the environmental assessment process early to minimise the need to modify the project approval for design changes, which do not significantly change the environmental impact of the project.”

IDENTIFY AND ESTABLISH A CORE PROJECT TEAM

SCOPE FOR IMPROVEMENT

Utilise skilled industry personnel in the development of scope documents and call on end users to substantially contribute to the preparation of the scope documents. This core team is critical for the success of a project.

COMMENT

It is true that people make projects happen. Getting the right people with the relevant combined experience and ability plays a substantive part in determining whether or not scope issues can be addressed in a successful way for the benefit of the project as a whole.

The current skills shortage in Australia makes the task of bringing together the right team for a project a challenging exercise. Several survey respondents reported that there has

been an exodus of skilled personnel from the public sector, and that this is now causing an acute problem with the development of adequate project scope documents.

The solutions most often suggested by survey respondents were:

- encourage secondments between the public and private sectors in order to facilitate the transfer of skills. This initiative would involve reciprocal secondments, where people from the private sector work in Government agencies for a period of time and vice versa. Most often the experience would benefit both Government and private sectors
- develop specific training programs for professionals to provide them with the skills required for successful project scoping.

“Having the right people involved is essential to getting clear strategic thinking.”

“Good scoping comes down to getting the right people and relationships to attain the outcome required.”

“Often the wrong people are involved in defining the desired outcomes of a project. Principals need to ensure that they get the right people on board.”

“Identify the key and the best advisers to the process.”

EMPOWER A PROJECT LEADER WITH CLEAR AUTHORITY AND ACCOUNTABILITY

SCOPE FOR IMPROVEMENT

The principal must empower a single person with the appropriate authority to drive the scoping process.

COMMENT

It is critical that there is a person identified who has the appropriate authority and responsibility to drive the scoping process, make decisions, be accountable and be the champion of the project. For example, there must be a person to deal with a range of different and strong minded stakeholder interests in projects.

“One of the key goals is to determine who has ownership of the project, that there is a clear line in the sand as to the person's power, direction and accountability for the particular project.”

“One key decision maker, not many, avoids mixed messages.”

“Appointment of a project manager with outcome based objectives.”

CLEARLY DESCRIBE THE PROJECT OBJECTIVES AND REQUIREMENTS ONCE IDENTIFIED

SCOPE FOR IMPROVEMENT

Once the objectives and overall requirements for a project are identified, those objectives and requirements should be described accurately with particular regard to the project and the contract delivery method chosen for that project – without duplication of, or any overlap or inconsistency with, the commercial terms of the contract.

COMMENT

The manner in which project scope is described can vary greatly from project to project. There are ways

improvements can be made in seeking to develop high quality scope documents, once the principal's and the stakeholders' objectives are established:

- choosing the right approach in scope description
- choosing the right contract delivery model
- prepare and share site related information
- check the contract package for consistency
- involve the tenderer in getting the scope documents right.

CHOOSING THE RIGHT APPROACH IN SCOPE DESCRIPTION

There are different approaches to describing projects and the choice of approach is critical to success.

All project participants must better understand the role of performance based and prescriptive scope documents and choose the appropriate type for the project in question. The participation in industry training programs for post graduates on how to develop a functional specification is also put forward as a positive initiative in this area.

There is a contrast of approaches that can be adopted. The following illustrates two approaches, at either end of the spectrum, in the context of a PPP or a Design & Construct project.

First, in recognition of contractors who often come up with innovative ways for finding the most effective means of achieving the principal's requirements, some principals will prepare a true performance based project brief.

Typically such a document will set out the ultimate outcomes and requirements for the project. It will then be left up to the contractor to determine the best way to achieve those outcomes so the completed works will be fit for the purposes as stated in the contract.

There are examples in major infrastructure projects where the performance brief can be as short as 14 pages.

Alternatively, principals, who have their own sound justification for the type of detail they wish to see in the

finished works (or otherwise feel uncomfortable, for whatever reason, to adopt a more performance based approach) will produce prescriptive scope documents. Such documents describe in great detail the works to be undertaken.

There are examples in major infrastructure projects where the project brief can be as detailed as 18 lever-arch files of scope description.

The appropriate approach will depend on the principal's objectives for the project in question. Either of the above examples could be appropriate for a particular project.

Indeed, for some projects there may be a combination of performance based and prescriptive requirements. There is a range of factors to consider when deciding the approach to be adopted in describing a project scope. These need to be aligned with the intended contract delivery method.

For PPP projects, where a concession is granted for a specified period there is sometimes greater focus given on overly prescriptive scope requirements for the construction phase. Preferably there should be more regard to the services to be provided during the (much longer) operation and maintenance phase of the concession period and the required handback condition of the asset at the end of the concession term.

“Contractors ordinarily price what is in front of them. It is, therefore, really an issue from the principal's perspective to clearly express what it is they need.”

“It is essential that the client not only has the ability to write down their objectives but also takes the time and effort to do so.”

“There is not always a strong understanding between the performance and prescriptive based scope documents. Institute an industry training program for post graduates on ‘how to develop the functional specification’. Such a program should be run by someone with experience, energy and intellect.”

CHOOSING THE RIGHT CONTRACT DELIVERY MODEL

The decision making criteria for the selection of the contract delivery model need to be properly assessed in the best interests of the project and the intended role of the contractor. Respondents to the 2006 survey highlighted that, in almost one in five projects, the wrong contract delivery method was selected.

There has been a trend in certain projects (particularly novated Design & Construct projects where design could be as much as 90% complete) for principals to adopt a Design & Construct contract delivery method for the sole reason of seeking to achieve single point responsibility of one contractor, rather than seeking innovation in the scoping of the project. In this type of project:

- the choice of contract delivery method is focused on risk minimisation rather than selection of the delivery model which best suits the scoping requirements for the project
- the scoping of the project is not truly Design & Construct, as the full detail (down to the schedule of finishes) is already largely specified.

Aligning the contract delivery method with the scoping of the project is a key ingredient to get right. The above example highlights that principals on occasions seek to align the contract

delivery method solely for the purposes of risk transfer, with scoping innovation as a secondary consideration.

The choice of a contract delivery model is not a solution to overcoming or reducing scoping problems for a project. There is no substitute for a principal having very clear objectives for the project it seeks to develop.

There is, however, a high level of perception from industry participants (78%) that some forms of contract delivery are more capable of overcoming issues that arise from inadequate scoping.

It is, of course, recognised that some contract delivery models do provide clients with greater flexibility and advantage to allow project scope to develop after contract signing. The Alliance model was identified (38% of respondents) as providing such flexibility in the right circumstances, including for the reason that it defers the need for determining the prescriptive nature of a required project scope. This may also enable the parties to take account of prevailing circumstances when resolving scoping issues as they may arise. The early contractor involvement approach for project delivery is also a model which could have benefits and flexibility in particular circumstances.

“The timeframes available for project development are becoming more compressed resulting in worse scope documents. Alliance contracting is one methodology to deal with this issue.”

“Problems with scoping start long before the selection of a contract delivery model.”

“After the delivery method is decided, there is still a need to ensure that the principal goes to market with whatever they need to give a clear picture to tenderers what the principal wants to achieve.”

“New forms of contracting, PPP, Alliance, etc, cloud what is appropriate scope – the criticism is that some use these forms as an excuse not to scope effectively and appropriately.”

“With the more common uses of partnership and Alliance style of project delivery, there are more opportunities to have all parties’ inputs into work scoping and gaining clear understanding of the work scope and risk management. This understanding is far more valuable than the document itself.”

PREPARE AND SHARE SITE RELATED INFORMATION

Bringing together relevant information on site conditions (such as underground services and geotechnical data) assists in the development of the scope document. Accordingly, during the planning phase of the project it is important that appropriate investigations into site conditions are undertaken.

If this information is not obtained prior to the commencement of a tender process, and if tenderers are otherwise not given the opportunity to undertake such investigations themselves before contract signing, there is a greater risk that unforeseen changes to project scoping may be required.

“Face the music. If you provide the information then accept it as being correct and that the contractor is able to rely on it.”

CHECK THE CONTRACT PACKAGE FOR CONSISTENCY

The intended overall contract package should be checked for consistency, particularly where that package is prepared by a multi disciplinary team. The number of different people involved in creating documents to form the contract package leads to the potential for ambiguities in, and discrepancies between, scope and other contract documents.

Sufficient time should be allowed for thorough checking of all contract documentation before issuing tender packages to market and certainly before contract signing.

Including an order of precedence provision in a contract is not the solution to, nor avoids, the checking process. In many instances such a provision will not overcome ineffective scope documents.

“Projects will be best delivered where the scope documents and other contract documents are consistent.”

“Solution will be better through critical examination of documents to remove overlaps and inconsistencies.”

“Audit all documents for consistency prior to issue.”

INVOLVE TENDERERS IN GETTING THE SCOPE DOCUMENT RIGHT

Early contractor involvement in developing the scope documents to form part of the contract package can assist in identifying scoping issues. However, a rigid competitive tender process will often stifle dialogue between principals and tenderers to flesh out scoping issues early in the process.

Consideration should be given to holding separate interactive workshops with each of the tenderers bidding for projects to tease out scope issues before contract signing. It is particularly important for Government projects that the bidding documents to tenderers clearly articulate the process to be adopted for such workshops.

Any probity issues can be addressed and will not necessarily exclude the opportunity to consult tenderers when, in appropriate circumstances, they should participate in the development of the scope document.

“The client hasn’t actually written the scope (it’s been an architect or consultant) so they don’t understand the consequences of some things... and it’s our job to point them out to make sure it’s not our problem if the bid is accepted.”

“Invite tenderers to participate in the development of the scope document.”

CAPTURE THE VALUE FROM A SUCCESSFUL BID IN THE FINAL CONTRACT

SCOPE FOR IMPROVEMENT

Where a contractor has been selected during a competitive tender process, consideration should be taken of what the successful tenderer has promised in its bid so the value is captured in the final contract.

COMMENT

During a competitive tender process for major construction and infrastructure projects, tenderers are often required to, or in any event do, submit design or other technical related documents as part of their bid. This documentation is often assessed by principals as part of the evaluation process.

It is important to consider whether or not some or all of those technical documents from the successful tenderer's bid should be included in the proposed contract to supplement the existing scope documents.

This is particularly relevant where components from that bid were assessed during the tender evaluation process and contain commitments of higher quality standards or scope options which would be of benefit to the project. The evaluation process will lose its effectiveness if technical information taken into account during that process does not find its way into the final form of contract, as well as probity issues and political scrutiny for those projects run by Government agencies.

Also, if elements of the bid documents are to be included, decisions must be made about how they should be included in the proposed contract in a manner which retains the integrity of the intended contractual risk profile.

While there are effective ways to include bid documents in a contract without adversely affecting the intended contract risk profile, there are also traps for unwary contracting parties if they do not get the inclusion right.

For example, the inclusion (without more) of detailed technical drawings from a bid to form part of the scope documents in a Design & Construct Contract could water down the contractor's fitness for purpose obligation.

Also, the inclusion of full tender responses and subsequent tender correspondence as attachments to contract documents tend to create significant ambiguity and inconsistencies with existing contract documents, leading to serious issues around the scope to be delivered by the contractor.

However, there are ways of overcoming these results in contract drafting. It is important to ensure that the final contract documents are changed appropriately to capture the added value or innovation.

Respondents referred to experiences where opportunities for innovation have been lost (or ignored) due to a principal's resistance to changing its initial scope document.

"Principals need to capture the value of the successful tenderer's bid in the executed contract."

"Any inconsistencies that arise should be resolved before the contract is signed, and if this means that the brief itself has to be amended to reflect what is agreed then that should be done."

RESOLVE SCOPING ISSUES AND DISPUTES UNDER A CONTRACT

SCOPE FOR IMPROVEMENT

Emphasis should be on preparing a contract that includes the most effective means for managing and resolving scoping issues and disputes, should they arise.

COMMENT

Where scoping is poor, one of the consequences reported by respondents (30%) is a significant level of disputes.

Although not the subject of the 2008 survey, results from the 2006 Report reveal that negotiation, including facilitated negotiation such as mediation, is by far the preferred method of resolving disputes and that a majority of respondents were not satisfied with the time, cost, process and outcome of the dispute resolution methods used in many contracts.

In the context of considering an appropriate dispute resolution regime, particularly for major projects, consideration should be given to early and alternative approaches to dispute resolution which are in the best interests of the overall project; rather than approaches which are time consuming, costly and potentially ineffective.

Alternative approaches may include appointing one or more independent industry specialists to act as a sounding board or review panel for the benefit of the project as a whole – ideally before an issue develops into a dispute. Another approach involves formally appointing a one or three member Dispute Resolution Board as adopted, for example, in the FIDIC form of contract.

A significant additional issue for the parties is to decide whether the findings of such a review panel or board will be binding.

“The issue is not just about getting the scope better but how the parties manage disputes relating to scoping after contract signing.”

Methodology

Blake Dawson, supported by Australian Constructors Association and Infrastructure Partnerships Australia, has undertaken research through a survey of industry participants and interviews with leading industry figures from both the public and private sectors. The construction and infrastructure projects surveyed were completed over the previous three years and had a minimum project value of \$20 million. In total, survey responses were received from 183 participants across Australia.

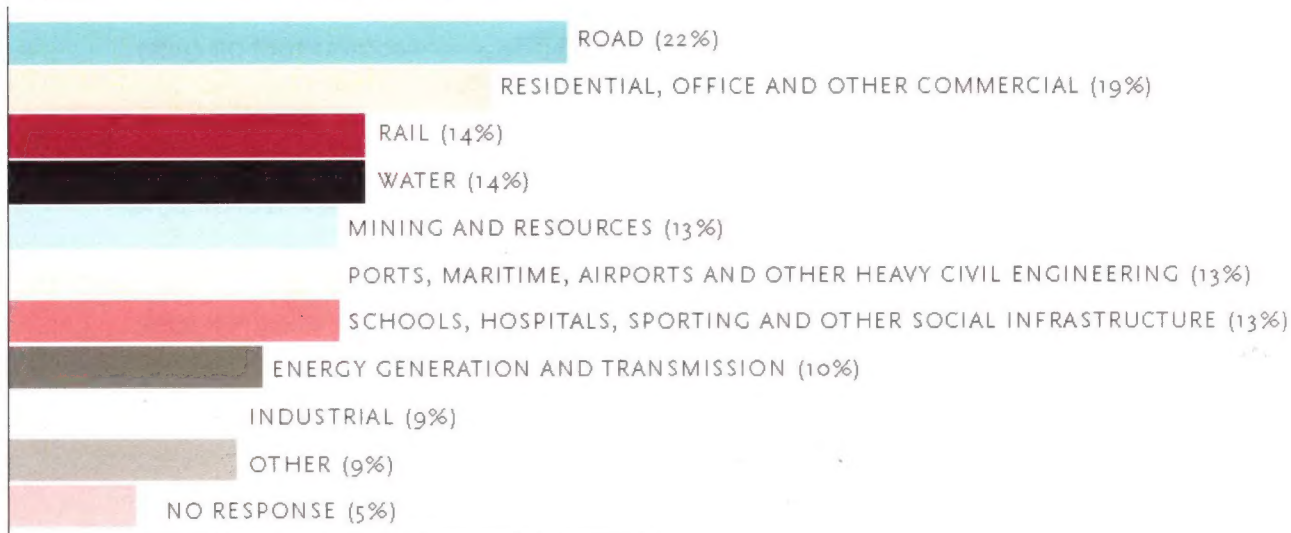
The survey opened on 2 June 2008 and closed on 12 September 2008. Questions in the survey were divided into two sections. The first section used four free response questions regarding market trends, factors which enable or impede adequate scoping and solutions to improve scoping. The second section required participants to answer 31 multiple choice questions based on their overall impressions of construction and infrastructure projects as well as experiences on a specific project. No incentive was offered to encourage participants to respond.

Statistics flowing from survey responses were generated by external consultants Ekas Market Research Services (EKAS), engaged specifically for the survey.

To test the views expressed in the survey and gain further insight on issues with scoping, representatives from Blake Dawson also conducted confidential follow up interviews with survey respondents, including key industry participants from across Australia. The Industry Viewpoints included in this 2008 Report are sourced from the survey and interview responses without identification or attribution.

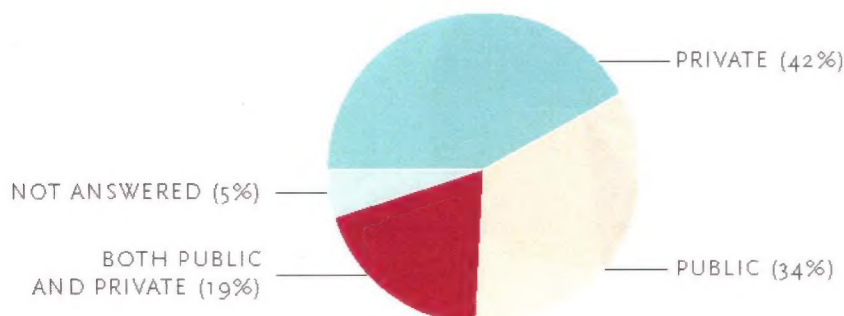
INDUSTRY SECTORS SURVEYED

Responses were received across many industry sectors.



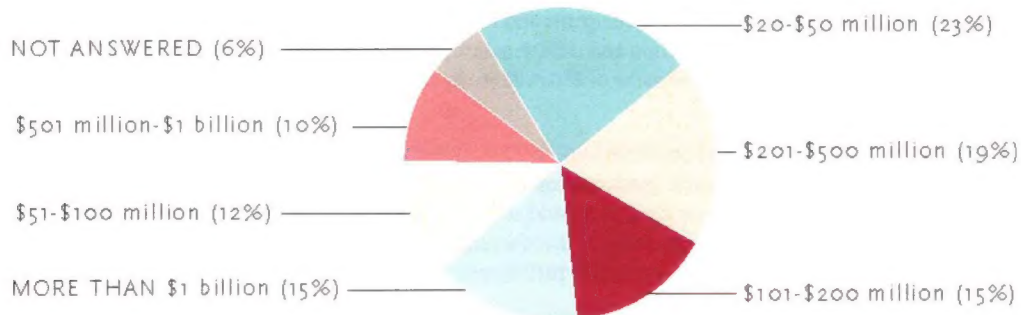
PUBLIC OR PRIVATE PROJECT

Projects surveyed were carried out by both public and private sectors and were split between the sectors.



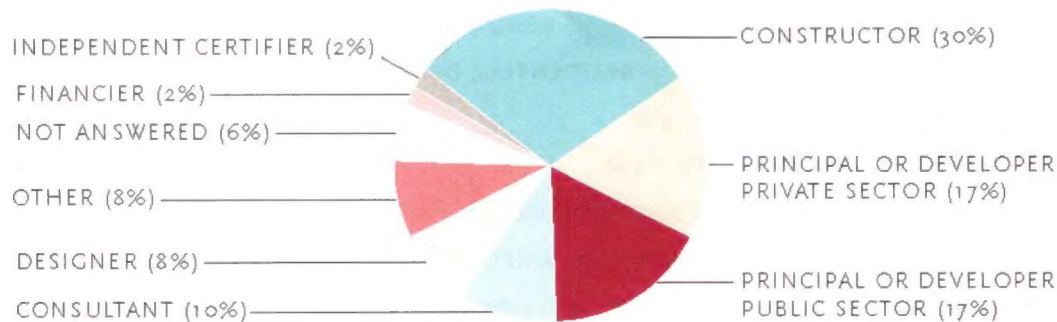
OVERALL PROJECT VALUE

Each project surveyed had a value over \$20 million, with an average project value of approximately \$360 million. The total value of projects was approximately \$60 billion.



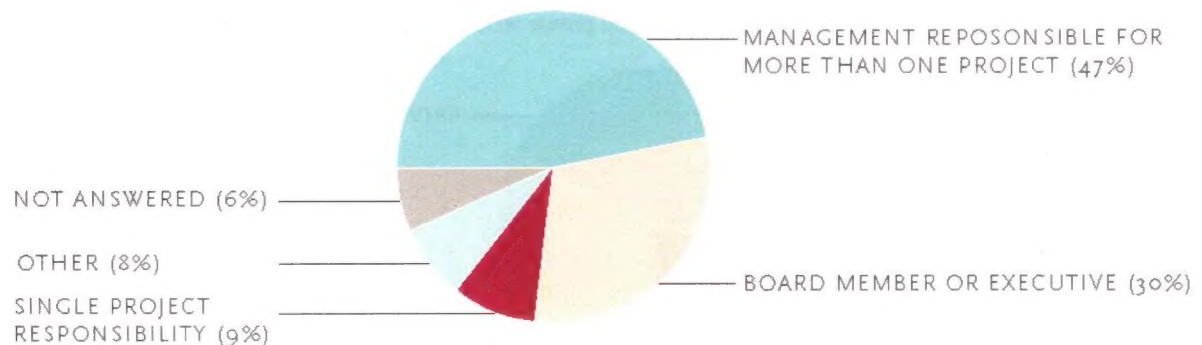
RESPONDENT'S ROLE IN THE PROJECT

A similar proportion of principal and contractor responses were received, along with a significant proportion of responses from a cross section of industry participants.



POSITION WITHIN ORGANISATION

The majority of responses were received from key decision makers with project and organisational responsibility.



AUSTRALIAN CONSTRUCTORS ASSOCIATION

The Australian Constructors Association (ACA) was formed in 1994. Its mission is to make *“the construction industry safer, more efficient, more competitive and better able to contribute to the development of Australia”*.

ACA has 17 member companies and its member companies have a combined annual revenue in excess of \$40 billion and collectively employ over 86,000 people in their Australian and international operations.

ACA member companies operate in a range of markets including residential and non residential building, engineering construction, process engineering, contract mining, engineering design, infrastructure development and maintenance, oil and gas operations and maintenance, telecommunications services and environmental services.

The ACA has, for many years, been active in promoting improvements in the commercial life of the industry – and has used its energies to inform, to identify issues and to propose strategies to improve performance.

BLAKE DAWSON

Blake Dawson gets to the heart of your legal needs and delivers commercially astute and practical solutions. It has a proud history, long standing client relationships, a passion for challenging conventions and thrives on cutting edge work.

The Construction & Infrastructure team is recognised as a leader in its field and provides top tier legal expertise and practical solutions to client needs based on an in-depth understanding of the enablers of construction and infrastructure project performance. This experience in infrastructure is second to none, as they have worked on most of Australia’s significant PPP and other construction and infrastructure projects.

Blake Dawson offers an “end to end” project solution for clients, from feasibility/procurement and contracting to implementation and delivery, together with dispute risk management and resolution throughout the project’s lifecycle. They work with clients to ensure the right contract is in place, create project delivery strategies and management processes, minimise risk and meet commercial objectives.

With a national pool of resources, Blake Dawson acts for many of Australia’s largest privately and publicly listed companies, Government agencies, project consortia, contractors and financiers on a broad range of projects.

INFRASTRUCTURE PARTNERSHIPS AUSTRALIA

Infrastructure Partnerships Australia (IPA) is the nation’s peak infrastructure body.

IPA’s mission is to advocate the best solutions to Australia’s infrastructure challenges, through facilitating open dialogue and genuine partnerships between Government and the private sector – thus helping equip the nation with the assets and services we need to secure strong and enduring economic growth.

Infrastructure is about more than balance sheets and building sites. Infrastructure is the key to how we do business, how we meet the needs of a prosperous economy and growing population; and how we meet national social objectives sustaining a cohesive and inclusive society.

IPA draws together the public and private sectors, in the spirit of enduring partnership, to build and prepare Australia for the infrastructure needs and challenges that lie ahead.

The Australian Constructors Association, Blake Dawson and Infrastructure Partnerships Australia would like to thank all industry participants who responded to the research survey and all who were interviewed for the purpose of this report.

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